



# ALICE AND THE FRANKENFOODS: A WELL REGULATED WONDERLAND?

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# ALICE AND THE FRANKENFOODS: A WELL REGULATED WONDERLAND?

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## **ALICE AND THE FRANKENFOODS: A WELL REGULATED WONDERLAND?**

### **PART I: ALICE DOWN THE RABBIT HOLE**

Soon her eye fell on a little glass box that was lying under the table: she opened it, and found in it a very small cake, on which the words “EAT ME” were beautifully marked in currants. “Well, I’ll eat it,” said Alice, “and if it makes me grow larger, I can reach the key; and if it makes me grow smaller, I can creep under the door”<sup>1</sup>  
–Alice in Wonderland

Lewis Carroll’s whimsical classic follows the adventures of a young girl’s as she wanders through a realm of alternate reality. Alice’s story may delight, but it is also calculated to disorientate, and the Wonderland through which she travels is at times alarming and dystopic. The excerpt above occurs early on in the tale,

after the young heroine has followed a peculiar white rabbit down a hole. Alice may be an adventurous sort, but she is wise enough to follow basic safety procedures, and she knows who to trust:

“and tied round the neck of the bottle was a paper label, with the words “DRINK ME” beautifully printed on it in large letters. It was all very well to say “Drink me,” but the wise little Alice was not going to do *that* in a hurry. “No, I’ll look first,” she said, “and see whether it’s marked ‘poison’ or not”; for she had read several nice little stories about children who had got burnt, eaten up by wild beasts, and other unpleasant things, all because they *would* not remember the simple rules their friends had taught them. . . [however] this bottle was *not* marked “poison,” so Alice ventured to taste it”<sup>2</sup>  
–Alice In Wonderland

Even in wonderland, someone is expected to look out for the safety of the food supply.

Already, at the beginning stages of her journey, and well before Wonderland becomes a little nightmarish, our heroine has revealed three attitudes that will become important to this discussion. Alice’s responses to the dainty confections show first that these foodstuffs are powerful: their appeal is ultimately irresistible, their potency is literally physically transformative, and they are necessary agents of the transformations Alice must undergo in order to continue her journey. Secondly, Alice’s cautious approach to the attractively packaged delicacies reveals a certain anxiety over the origin and safety of the food and drink. This anxiety is a central thread running through the literary and other fictional examples examined in this paper, and is visible across several fictional genres. Any of Alice’s readers can identify with this latent anxiety: it is the foreseeable result when one has limited control over the food that is placed in front of one.

Finally, Alice displays a reliance on authority. She expects to be warned, informed and reassured about what she is about to consume. Even in Alice’s Wonderland, where the laws of nature herself, of custom and of society are turned upside down, there is an expectation that someone is responsible for quality control of edibles. The vital substances that nourish and sustain us, and by extension, the substances that transform

our physical selves, and to a degree our very identities are regulated just as they are on our side of the rabbit hole. Alice’s trust in the hidden Wonderland regulator is so profound that the labels on the food are not merely a guarantee against dangerous adulteration, they are tantamount to an inducement to consume the alien substances.

### **A. Food, Power, Anxiety and Reliance**

#### **(i). Food Power.**

Carroll’s depiction of the powerful influences exerted by foodstuffs resonates with many of the most fundamental myths and legends in our collective culture. While the obvious human need for sustenance plays a role in these myths, associated desires are at least as important. Take the forbidden fruit that is the instrument of mankind’s downfall according to the Judeo-Christian religious tradition.<sup>3</sup> The most literal interpretation of the biblical tree of life story reveals that it is not the need for nourishment that causes the Adam and Eve’s famous transgression. Rather, it is the fruit’s assigned significance, a type of ideological packaging, that allows it to exert its powerful temptation. Just as Alice is spurred on, in the face of her misgivings, to sample and then devour the confections in Wonderland, the fall of mankind is precipitated by a power of attraction that proves too great to be withstood.

Cultural referents repeatedly confirm the additional potency of desire that can be awakened by attractively presented foods. The mythical punishment of Tantalus: eternally unslaked thirst and unabated hunger, is

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<sup>3</sup> “Of every tree of the garden thou mayest freely eat: but of the tree of the knowledge of good and evil, thou shalt not eat of it; for in the day that thou eatest thereof thou shalt surely die,” Genesis 2: 16-17.

the template for a vision of eternal anguish. According to myth, Tantalus is forced to stand waist deep in a pool of water, overhung with aromatic fruit laden boughs.<sup>4</sup> These objects of need and desire would recede to just beyond his grasp each time he reached for them. Similarly Phineus was confined to an island to starve slowly while a flock of harpies devoured the enticing banquet that magically appeared each night.<sup>5</sup> In these stories, the torture of insatiable hunger is exacerbated by the additional appeal added to the foodstuffs being withheld, and the lack of control over food sources. It is not merely the imperative urge of hunger that is being exploited in these examples, but the equally strong desire generated by the food prepared and presented by others. This presentation can amplify the power of the foodstuffs themselves.

Fiction also repeatedly pays tribute to the transformative potential of food. In Alice's case, this transformation is direct and physical.<sup>6</sup> The changes that take place have deeper implications than the merely physical, however. As Alice shrinks and grows, her perspectives and opportunities change dramatically. Jonathan Swift's satire Gulliver's Travels offers an insight into the significance of these altered perspectives and opportunities.<sup>7</sup> In Swift's novel, Gulliver visits several different societies on his journey, the first two of which place him in a situation similar to Alice's. In Lilliput, Gulliver encounters tiny people to whom he is a relative giant. Gulliver's size renders him the object of fear and respect as it becomes evident to the Lilliputians that he can perform feats of tremendous strength. In Brobdingnag, Gulliver finds himself a tiny creature in a land inhabited by Giants. Here, he is a valuable curiosity, and while his physical power is diminutive in comparison with his hosts, his perspective is heightened in its detail. In fact, his identity is

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<sup>4</sup>See HOMER, THE ODYSSEY. In another version of the myth, Tantalus is being punished for attempting to share ambrosia, the food of the Gods, with mankind.

<sup>5</sup>Until rescued by Jason and the Argonauts. See APOLLONIUS RHODIUS. ARGONAUTICA II.

<sup>6</sup>Another popular children's author, Roald Dahl, explores a more sinister take on this idea in his short story "Royal Jelly." In this rather cynical tale, a wealthy mother brags that she feeds her newborn costly royal jelly in an attempt to aid his upward mobility. Her rationale is that since the consumption of royal jelly transforms an ordinary grub into a queen bee, its properties can only enhance the inherently superior qualities of her own offspring. By the close of the tale, with no hint of interruption of the regime in sight, the child has developed fine bee-like hair all over the surface of his body. ROALD DAHL, THE COLLECTED STORIES OF ROALD DAHL, *Royal Jelly*, 85-109 (Penguin Books 1992) (1991).

<sup>7</sup>See JONATHAN SWIFT, GULLIVER'S TRAVELS AND OTHER WRITINGS BY JONATHAN SWIFT, 21-279 (Bantam Classic 1962) (1726).

defined in part by his point of view, his perceived societal niche and his power to affect his situation.

While Gulliver is changing only in relation to his society, his experiences shed some light on the significance of Alice's transformations. The magical foods she eats similarly alter aspects of her identity: she is perceived differently depending upon her size and has different capabilities. As the cake and drink make her in turns bigger and smaller, she in turns a powerful figure, regarded with alarm and a tiny person, set adrift in a pool of her own giant tears. It is by growing and shrinking that she is able to fit through the various entrances and exits in Wonderland. And it is the foods she eats that facilitate each phase of her adventure.

### (ii). Food Anxiety

While at times inconvenient, Alice's transformations are largely positive on balance, and her anxieties about the foodstuffs are dispelled with her safe return home by the end of the story. Many of her anxieties as to the consequences of eating the foods that appear before her are tangible however. Well known tales of transformation by consumption do not always have happy endings however. The eating of forbidden fruit in the Garden of Eden precipitates an unhappy transformation in identity for Adam and Eve. They fall from the status of blessed creatures enjoying the bounty of the garden and of God's grace, to outcasts, forced to labor and struggle. They leave the garden bearing the indelible stain of original sin. Mankind suffers a monumental fall as a result.

Modern myths in many media further explore the possibly dehumanizing effects of eating the wrong foods. Horror and science fiction cinema have repeatedly explored the potentially disastrous moral consequences of eating the foods of indeterminate origin or mysterious composition. The 1999 sci-fi movie the Matrix

presents a vision of a world in which human beings are no longer born, but merely “grown” as crops.<sup>8</sup> Kept in amniotic stasis as images of reality are fed into their brains to pacify them, members of the human race are reduced to the equivalent of livestock to produce electricity for the machines that control the earth. Perhaps the most dehumanizing aspect of this dystopian slavery is the clinical efficiency with which “the remains of the living are liquefied and fed intravenously to the dead.” The similarities between treatment of humans in the matrix and battery bred chickens is hardly lost on the audience. This type of forced consumption of our own kind places us effectively and uncomfortably back down among the beasts of the earth, from which our sensibilities and souls demand we separate ourselves.

This anxiety of eating the chemically nutritious but ethically poisonous recurs in popular film. Unwitting cannibalism is the clearest cut extreme of the morally poisonous: among the most famous acts of revenge involve deceiving or forcing the victim into committing the ultimate moral crime. The curse of the house of Atreus, the central plotline in several of the best known classical Greek tragedies, ruins the destinies of generations of those associated with the Atreides family. This moral curse is precipitated by the brother of Thyestes who is angered over the latter’s infidelity with his wife. Thyestes is invited to a feast, only to discover afterwards that he has been dining on the remains of his own children.<sup>9</sup> The food turns out to have been laced with an abominable spiritual taint, somehow worse than that of run of the mill poison. Alice’s careful search for a “poison” label is well advised, but in a world where one lacks control and the boundaries and definitions of reality are altered, straightforward poison may not be the only danger. Horror stories remind us that food may be tainted in a manner that cannot be detected by taste or smell, but may be socialized and not material, and have devastating consequences nonetheless.

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<sup>8</sup>THE MATRIX (Warner Brothers 1999).

<sup>9</sup>See AESCHYLUS, ORESTEIA.



(iii). *Reliance on the Regulator*

Picture the following: A young woman is snatched from her sunny existence and whisked away to indefinite confinement in a dark and alien underground lair. A child of the light, she finds herself strangely disoriented and alone. She mistrusts her captor, and vows to resist his insidious wiles. She perseveres in her resistance, determined to face death before dishonor, if she must.

Time passes. She becomes unsure if she will ever be retrieved from her dank confinement. She is nagged by hunger and cold, more so by an overwhelming thirst. Her flesh creeps at the thought of her absent captor, with his promises of protection and sustenance. Her gaze comes to rest on the untouched banquet he has left her. “Probably drugged, or worse, poisoned,” she speculates with a sniff. She is disgusted by the greasy, opulence overflowing every plate, and comforts herself with thoughts of a sensational and well deserved rescue. She imagines his impotent rage and brutish confusion once he discovers her inexplicable escape and her hand wanders over the contours of a strange fruit at rest in one of the bowls. Absentmindedly, she handles it, accidentally breaking the skin. Its juices ooze down her wrist as she raises hand to mouth. . .

In the Roman myth of Pluto and Persephone (or Hades and Proserpine in Greek tradition), the daughter of Demeter, goddess of earth and harvests is kidnapped by Pluto, the god of the underworld. Demeter is driven to distraction in her daughter’s absence, resulting in agricultural infertility and meteorological inclemency on earth. When Demeter finally finds her daughter, she pleads with Pluto to release her. He agrees to let Persephone go, on condition that she returns to him for as many months out of the year as she has eaten seeds from a pomegranate during the entirety of her confinement. The myth is meant to explain the change of the seasons, as Demeter mourns each year in the absence of her beloved daughter.

Six months of confinement in the underworld seem a heavy penalty for the consumption of no more than half a dozen pomegranate seeds. But myths such as these resonate with a very real social fear. As consumers, we are largely separated from the land and the many phases of development and production our food undergoes are usually a mystery. It is only natural that we look to some authority to reassure us that the consequences of our consumption will not be more than we have anticipated or can handle.

Part of what places Alice's adventures in the realm of fantasy and not nightmare is the surety that a hidden regulator provides assurance that the consequences of consumption will not be disastrous. Alice's anxieties are quieted by the labeling on the food she consumes: she reasons that where a label has been applied, the labeler has complied with basic duties. In Wonderland, as in our modern world, the consumer first looks for clear indications of certain danger. Alice makes an inference (perhaps an erroneous one in the real world), that regulatory labeling requirements have constituted a guarantee of safety.<sup>10</sup> Alice assumes that the first duty of a label is to warn, to dispel any suspicion of danger that a foodstuff may be an unsafe substance or one that is hazardedly adulterated. Alice is satisfied that where the label makes no mention of harm, it has appropriately moved to fulfill its secondary function: conveying information, and even guidance to the consumer. Whether Alice is satisfied with the sufficiency of either is uncertain. She is nonetheless reassured enough sample the strange foods, under the assumption that they have been labeled in accordance with her best interests.

Given the fundamental importance of food safety, our daily need for unadulterated and sustaining foodstuffs, and the anxieties that arise when we have little control over our food supply, it stands to reason that we look to an overarching authority for reassurance. It is taken for granted that our food should be safe, edible, and free of harmful agents or unacceptable levels of taint. But social anxieties relating to food are not

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<sup>10</sup>See discussion *supra*, in Part II.

exclusively medical, they are often perceptual, and in some cases the latter classification is the dominant one. The modern consumer looks to the FDA for reassurances that foods are safe, and that the information concerning the consequences of eating a particular foodstuff are accurate and complete. The heightened reliance by consumers on the FDA raises questions regarding the administration's role responsibilities with respect to various types of consumer concerns.

In Wonderland, Alice is able to safely presume that the basic regulatory function of ensuring food safety has been met. However, the secondary labeling function, of providing information about a foodstuff has been bypassed in its entirety. The labels might more appropriately read "shrinking potion, active within several minutes, reversible by use of growing cake." Instead, instructions are all that Alice is provided with. Her personal choice and ability to arbitrate are replaced merely with a choice of whether to follow the instructions on the label or not. She is actively advised to eat and drink, and provided with no advance information about the consequences. Perhaps in Wonderland, the regulatory body is so in tune with the consumer that it is able to make these choices for her. Perhaps, if told in the most sterile terms what to expect from eating and drinking, Alice would have been scared off, and would have foregone her wonderful adventure.

In our world, the FDA does not openly permit manufacturers merely to instruct people to eat one product or another while providing them with no information about the food product or the potential consequences of eating it. However, the FDA may exercise some discretion regarding what manufacturers are required to put on their labels: even in our world it may not be desirable to alarm the consumer unnecessarily. Many consumers may look at powerfully packaged food commodities with an eye almost as trusting as Alice's. Although its function is protective and regulatory, it is difficult for the FDA to escape entirely from performing an indirect advisory function for these consumers.

Perhaps science will one day tell otherwise, but conventional wisdom finds no inherent toxicity in pomegranate seeds; nor even in the well prepared shoulder of one's own offspring, (though Thyestes might argue other-

wise). The socialized consequences of eating tainted food in these fables are horrific, although they may be scientifically indeterminable. Filth in our food, carcinogens and dangerous foreign objects may readily be deflected before they reach our tables, but can the FDA avoid factoring in the more intangible, socially assigned taints in our edibles that may have ideological consequences rather than medical ones?

### **B. Food Production Anxieties: Nature, Technology, the Middleman and the Regulator.**

The short answer is no. The FDA functions partially to alleviate consumer anxieties about the food supply. Much of this is achieved using stringent scientific methodology to ensure in actuality that hazardous substances do not enter the food stream. The FDA's conscientious adherence to the use of high scientific standards is common knowledge and serves the purpose of heightening consumer confidence. This credibility crosses over into the areas where the FDA uses more subjective and perception-based methods to allay consumer anxiety. In the real world, all consumers may not yet have developed the level of trust that Alice displays on her Wonderland adventure, where she defers to instructional labeling absent informational reassurance, but there is a significant level of consumer deference to the authority of the FDA is evident nonetheless.<sup>11</sup>

As consumers, we may be reassured by the availability of a certain amount of information about where our food comes from. The average consumer, absent unusual diligence, is probably unaware of the origin, growing conditions, processing protocols and specific manufacturing standards that have produced their particular frozen entrée. It is arguable that most consumers do not wish to know. The FDA has been able

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<sup>11</sup>See discussion *supra* in Part II.

to strike an impressive public relations balance with the American consumer. Its reputation for stringent scientific methodology has built tremendous credibility with the public, which has allowed for more abstract policies to be applied in the public interest. Controls against aesthetic contamination, labeling guidelines providing certain information, but not requiring detailed (and in most cases unappetizing) descriptions of manufacturing processes are among the many examples of the psychologically protective FDA policies.

There is certainly some room to subscribe to Alice's trusting philosophy when it comes to the food we have little control over, but which is intimately incorporated into our bodies several time a day. We may not be in Wonderland yet, but the FDA does go some way toward reassuring us that our food is safe and allowing us to retain our appetites in the process.

#### (i). The Tradeoff

Nature and technology work in balance and compliment to feed consumers. This balancing is framed scientifically, it is monitored and analyzed empirically and stringent standards are applied at either end of the food production chain. Raw materials must meet high standards of quality, they must be edible and unadulterated, and processing must follow stringent procedural and sanitary guidelines. But regulations regarding the standards for ingredient and for processing must also take into account latent consumer perceptions and desires. The FDA must maintain its authority as a scientifically orientated body, while keeping an eye on societal attitudes.

Subjective and non-scientific considerations shield us from some of our uncertainties about the food supply. The tension between nature and technology in the production and distribution of foodstuffs is not directly within the control of the average consumer. Fiction and myth reveal over and over again anxieties that arise from human perceptions of the tradeoff between the natural and the technological in what we eat.

(ii). Nature

The appeal and power of nature and “natural” food is often culturally idealized. The Garden of Eden is the template for a desired utopia of bounty, purity, healthfulness and bliss. Immortality, contentment and harmony with the earth and its inhabitants appear to be within the reach of any inhabitant. The fruits of the earth are nourishing, wholesome and uncorrupted, and we are somehow elevated by their very consumption. But we are reminded of the dangers lurking even in this paradise, of the hazardous, the transformative, and the forbidden:

Of every tree of the garden thou mayest freely eat: but of the tree of the knowledge of good and evil, thou shalt not eat of it; for in the day that thou eatest thereof thou shalt surely die.

– Genesis 2: 16-17.

The goodness of nature’s bounty is evident, but it is also mysterious, and requires knowledgeable and responsible handling:

O mickle is the powerful grace that lies  
In plants, herbs, stones, and their true qualities,  
For naught so vile that on the Earth doth live,  
But to the earth some special good doth give;  
Nor aught so good but, strained from that fair use,  
Revolts from true birth, stumbling on abuse.<sup>12</sup>  
– Romeo and Juliet

In many of his works, Shakespeare identifies tremendous potential for mankind to benefit from the products of the earth, while pointing out the attendant potential for disaster. Once man has been exiled from the

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<sup>12</sup>WILLIAM SHAKESPEARE, THE NORTON SHAKESPEARE, *Romeo and Juliet*, 2.2, lines 15-21, 895 (Steven Greenblatt et al ed., 1997).

Garden of Eden, his elevated stature as the crown of creation becomes something of a struggle to maintain. The human animal, with no technology to assist him, occupies a middle rung at best on the food chain. Nature must at times be struggled against, but preferably it should be harnessed and tamed.

This anxiety may explain why “food processing has been the preoccupation of man ever since he progressed beyond the point where he consumed his food at the place where, and at the moment when, he acquired it. . . [the concept is] as old as civilization itself.”<sup>13</sup> From our earliest experiments in nutrition, it was probably evident that some harness needed to be placed around nature’s vagaries, if only to protect the human race from some of the undesirable consequences of uninformed consumption (such as eating poisoned berries at the most basic level). Even in modern times, we require an intermediary between ourselves and the slightly frightening and at times unpredictable abundance of nature.

In contemporary society, however, it is unlikely that we could find a purely “natural” foodstuff, or that if we did, we would even consider using our own judgment as to whether it was safe to eat. Technology continues allow us to alter, preserve and purify the nature’s raw materials to create palatable, convenient, appealing and even nutritionally fortified foods. From an anthropological perspective, it allows us to separate ourselves from the “animalness”<sup>14</sup> of foods by altering their presentation, or breaking them down into constituents that provide no clue as to their potentially unnerving or unappetizing origins.

### (iii). Technology

Technology may afford us tremendous power and advantage in the processing of raw foodstuffs, is a significant social anxiety however. Current mistrust of over processing resonates with anxieties vividly drawn in fiction:

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<sup>13</sup>Ray Bralsford, *Food Processing*, 209-11, in *THE FOOD CONSUMER* 209 (C. Ritson, ed., 1986).

<sup>14</sup>*Id.*

we may wish to be held at some distance from “nature,” but there is certainly the potential to become too far removed. Fictional representations such as those in the Matrix remind us that scientific efficiency is not without its costs or potential for infringement on our human sensibilities. Even if the ends of chemical efficiency could best be achieved via cannibalism, the psycho-social cost would be far too high. Clearly, scientific scrupulousness and efficiency aren’t everything. It is also worth noting that with current social trends to avoid often miniscule amounts of “artificial” additives and return to more “natural” foods may not be entirely rational.<sup>15</sup>

(iv). Hands on Our Food

Another vital link in the food anxiety chain is the participation of others in our food production and preparation. Concerns raised in the nineteenth century by Frederick Accum led him to use the Book of Kings quotation “there is death in the pot” as a sub-title to his analysis of the rampant adulteration of commercial food and drink at the time. Until the government overcame its reluctance to intervene among producer, retailer and consumer to regulate the price or quality of food, additional adulteration occurred at almost every stage of food handling. Sulfuric acid was added to beer to give it an “aged” taste and the skins of Gloucester cheeses were pigmented using red lead. Medieval controls such as that over the strength of beer did not extend to the entrepreneurial and adulterating efforts of food handlers.<sup>16</sup> Valid consumer anxieties arise then in considering the potential for middlemen to add value to foodstuffs on their way to consumers.

As technology increasingly advances in the food preparation industries, cultural fears about the doings of

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<sup>15</sup>Bralsford argues that while some additives cause allergic reactions in some people, so do natural substances such as gluten in wheat flour to coeliac disease sufferers, and strawberries and lactose to those with intolerances. He concludes notes that “on balance, logic says that we ought to feel safer with additives, which have been extensively tested and the use of which is properly controlled, than we do with the millions of other naturally occurring chemicals in foods of which we know nothing.” *Id.* at 222.

<sup>16</sup>MARGARET LEEMING, A HISTORY OF FOOD FROM MANNA TO MICROWAVE 141-43 (BBC Books 1991)



“mad” scientists may also color consumer perceptions. The figures painted in fictional works such as Mary Shelley’s Frankenstein and Robert Louis Stevenson’s Dr. Jekyll and Mr. Hyde are of tremendously irresponsible scientists. In the first case, one tampers with natural processes and unleashes scores of unforeseen problems (among them a psychologically displaced and lonely aberration whose antisocial activities whose antisocial activities can hardly be criticized given his treatment by an unwelcoming society). In the latter, inventing and drinking potions of a far darker sort than Alice’s lead to the transfiguration of a man into a monster. Each of these stories is deeply entrenched in popular myth and parallels have been drawn between the anxieties expressed in these works and fears associated with the gene manipulation techniques that are increasingly being applied to food crops. Fearful associations are drawn between the cautionary tales noted and today’s “Frankenfoods.”<sup>17</sup>

(v). Regulatory Function

As consumers, we rely on the regulator to negotiate the balance between the natural and the technological in determining what ends up on our plates, and to stay the hands of those who might contaminate our food through recklessness or malice. Our enjoyment of the attractive elements of the natural in its most desirably enhanced form is further protected when we are at least partially shielded from the emotional anxieties associated with the food production process. Naturally occurring allergens and poisons must be neutralized or controlled and processing must be overseen to ensure quality and safety. Some information about the finished products available to enables us to make at least partially informed evaluations regarding the presentation, nutritional benefits and health consequences of accepting a certain foodstuff. Reliance on the assurances of a credible regulator can offer an appealingly abridged and convenient basis for these

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<sup>17</sup>This conflation relies on the definition of Frankenstein as a monstrous creation that usually destroys its originator.

decisions.

Of course, relinquishing too much personal responsibility to the regulator has its attendant anxieties as well. The popular science fiction film, *Soylent Green*<sup>18</sup> is one of the many expressions of this anxiety. The film depicts a future society in which the natural has become functionally extinct, the earth blighted and barren, and the food supply limited. What food there is consists of artificially color-coded, hyper-processed substances issued to the masses at regular intervals by the government. Consumers are reassured that the food is produced from benign sources, but investigation reveals that the most recent of these foodstuffs, soylent green is “made from people.” This film resonates not only with anxieties over technology’s incursion into the wholesomeness of the food supply, but also with a distrust of the authority on whom society must rely when forced to relinquish control over the food’s origin and preparation. This is Alice’s Wonderland gone horribly wrong.

Competing anxieties demand that consumers be permitted to situate themselves comfortably between the natural and the technological. An ideal regulator faces some responsibility to facilitate this, while providing some degree of reassurance. This reassurance must be benign in character, however and not offered at the expense of consumer autonomy when the ideological or moral stakes are high.

(vi). The Culture Component: Waiter, Waiter, There’s a Fly in My Soup!

In commentaries assessing the psychological factors influencing food choice, analysts have identified a strong ideational component to food evaluation.<sup>19</sup> In addition to the obvious process of sensory evaluation by taste, texture, odor and appearance, consumers assess the potential benefits or dangers that may result from eating a food. In addition, there is a strongly cultural assessment, by which the “inappropriate” and “disgusting”

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<sup>18</sup>SOYLENT GREEN (MGM 1973).

<sup>19</sup>Paul Rozin et al, *Psychological Factors Influencing Food Choice*, 85-106, in THE FOOD CONSUMER.

are rejected.<sup>20</sup> Under this last assessment, primarily inorganic foods are deemed inappropriate to eat, while certain mainly organic foods are considered disgusting because of what they are, and not necessarily because they are medically dangerous or would fail a blind sensory evaluation test. Examples are as extreme as “pure associational contamination,” as in the case of a majority of adults proving unwilling to eat a favorite soup that has been stirred with an unused flyswatter.

Another example, closer to the boundary of the FDA’s scientific method is that most Americans would refuse a beverage if they believed there was a microscopic trace of urine in it. Acceptable trace contamination levels may be set by the FDA by a risk benefit analysis that is facially based on scientific method. However, the scientific character of the evaluation process is undercut by the need to consider ideational consumer responses to the standards. Consumers may not be able to agree on the maximum amount of insect parts per million chocolate bars, nor on how much of a price increase they are willing to support in order to guarantee that level. The FDA must make the evaluation on their behalf, and thankfully omits from every candy bar wrapper an estimate of the weight of insect contaminants it may contain.<sup>21</sup> This is the stuff of Wonderland regulation, where the consumer, like Alice, is protected from bombardment with reminders of her food anxieties. Alice is permitted to enjoy the potency of the attractive foodstuffs she encounters, and offered the guidance of labeling, without the responsibility of evaluation.

FDA evaluation of contaminants cannot be said to be purely scientific, since certain contaminants are primarily classified as such because of cultural factors, rather than because of medical hazardousness. It is notable that “[a] few substances, such as feces, seem to be universally disgusting, in our terms, in the USA and the United Kingdom, the category includes insects and the meat and/or viscera of a variety of animals (e.g. dogs).”<sup>22</sup>

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<sup>20</sup>*Id.* at 100

<sup>21</sup>Melvin J Hinich and Richard Staelin’s suggestion that producers be required to affix a label indicating the level of aesthetically pleasing contamination, perhaps detailing the exact level of contamination suggests a less ideologically protective role for the FDA. Casebook p253.

<sup>22</sup>Rozin *supra* at 88.

An anthropological analysis of food choice across culture reveals many food aversions as culture-specific: “foreigners . . . are . . . held to indulge in disgusting habits. The Mukanranga are repelled by the nearby Shangaans, who eat tortoise, and other peoples in the Zambezi valley that eat lizards. . . the Massa are horrified by the neighboring Tupuri’s weakness for vulture meat.”<sup>23</sup> Purely on the subject of insect and anthropod consumption, the Shona consider locusts a delicacy, as do the French, snails. Flying termites and caterpillars are also considered good eating by some (and when compared to other slightly odd-looking creatures such as the shrimp, the distinction appears slightly arbitrary). Our distaste for insect contamination in processed foods is partially a matter of appropriateness: no matter how much you enjoy the occasional locust, it is quite another thing to find part of one in your Hershey bar. Thanks to modern sterilization techniques, aesthetic adulteration is often the only remaining concern in setting maximum contamination levels for filth in food. The aversion to insect contamination therefore is almost purely cultural and sociological. The question of a food taint with a social as well as a medical basis may seem problematic for an agency whose credibility is largely based on its emphasis on scientific method. Yet it is a valid component of the process by which consumers are protected against their legitimate food anxieties; it is an appropriate concession of scientific method to social sensibility.

## **PART II: FRANKENFOODS: ANOTHER STEP TOWARD WONDERLAND?A. The Frankenfoods Lands**

### *(i). Introduction*

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<sup>23</sup>Ann Murcott, *You Are What You Eat: Anthropological Factors Influencing Food Choice*, 115 in THE FOOD CONSUMER.

Alice may have found a regulatory Wonderland in which she could blissfully follow the instructions on her food and remain relatively certain that the resulting effects, however powerful, would not be detrimental. The tradeoff in such a world has to include relinquishing access to a certain amount of information. The type of bliss that protects our sensibilities from potentially disconcerting information about how and from what our food is produced must necessarily be accompanied by some degree of ignorance.

In our world, a balance must be struck between the provision of material and relevant information and a certain degree of consumer protectionism. Consumers should be provided with enough information to make informed decisions, but not unduly subjected to alarming and potentially unappetizing technical details about the food on their plates. The FDA is faced with the responsibility of assessing scientific truth and balancing scientific method with consumer perceptions and sensibilities in their regulation of food producers. In deciding how best to adapt regulatory schemes to new problems arising in the field of food regulation, the FDA must rely on its credibility with consumers as a scientific failsafe on food safety and as a check on producer conduct. Many consumers may not realize that although the FDA keeps a hawk like watch over adulteration of the food supply, its control over food labels should not necessarily give consumers the impression that required labeling is a warning statement.<sup>24</sup>

The question then, of how to balance concerns of protectionism and informed consumer choice must include assessments of what the consumer's best interests are and how far the credibility of the FDA extends or should extend to protect them. The recent expansion in the application of new biotechnology to food production provides a valuable case study for this issue.

(ii). Consumption on a Need to Know Basis?

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<sup>24</sup>51 Fed. Reg. at 13, 388.

Biotechnological advances, and their widespread application and exposure in the media have elevated public anxieties about the food supply. Darwin's theories, not always effortlessly accepted by public consciousness in their most "natural" incarnation,<sup>25</sup> appear to be operating in hyper speed under "artificial" conditions. Dolly the sheep has been indelibly printed on public consciousness, and has reawakened anxieties that mad scientists are back to their old tricks. A strand of biotechnology that applies specifically to this discussion, the genetic engineering of plants to develop desired traits such as increased size or nutritional content, resistance to adverse environmental factors and pests, and extended longevity<sup>26</sup> have been much publicized. This publicity has often taken the form of sound bytes that necessarily disregard the complexity of the scientific process involved.

This particular strand of biochemistry may not differ in essence from slower paced processes existing in nature, or from the selective breeding that has been essential to efficient cultivation since its adoption. However, current methods of gene manipulation provide three advantages over more traditional methods. Most obviously, the speed with which a desirable trait is expressed is considerably greater using direct genetic alteration. Several generational stepping stones can be bypassed using direct gene insertion that would otherwise be necessary using selective breeding methods. Secondly, a degree of uncertainty is removed from traditional breeding processes, which do not allow the same level of trait isolation. Selective breeding may eventually result in the expression of a desired trait, but several other undesirable traits may express themselves in the interim, requiring (often time consuming) additional screening. Gene manipulation involves the isolation of a gene specifically selected to perform a particular purpose, and so reduces the potential for

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<sup>25</sup>Controversy surrounding the Scopes case was famously dramatized in the theater and film versions of *Inherit the Wind*. Establishment clause issues have also famously been raised concerning the ability of government to sanction furthering religious purposes where a state statute required the teaching of creationism to accompany teaching of evolution. Genetic alteration even at this natural level has had serious implications for public sensibilities.

<sup>26</sup>Robert P. Ouellette & Paul N. Cheremisinoff, *Applications of Biotechnology* 4, 6-12 (1985).

certain collateral traits to be expressed. Finally, using modern methods massively expands the gene pool: whereas in nature, plants can only breed with other plants, in the biogeneticist's laboratory, animal genes can be inserted into plant life to bring about desired changes. In sum, biotechnology offers a bona fide shortcut to addressing nutritional concerns on a worldwide scale.

Accompanying each of these benefits is an associated social anxiety however. The very speed with which new advances are applied has understandably given rise to fears about the long term effects on the modified organisms themselves, their interaction with and possible modification of other organisms in their ecosystems and of course, their effects on consumers. The insertion of an isolated gene also involves some unpredictability as to where the gene will land. In traditional breeding, a newly introduced gene settles into a niche evolved specially, over time, to accommodate it. As such, there is potential for migration of the manipulated gene, or unpredictable interaction of the incorporated gene with other genes and/or organisms.

The mingling of gene pools that nature has seen fit to separate raises ethical concerns fundamental to human morality. It seems that the further apart on the genetic spectrum certain species are, the more disturbing their (usually impliedly accidental) intermingling is. Again, the horror genre consistently provides examples of genetic experimentation gone awry. Popular superhero stories often operate on the principle that transformative or mutative powers can be awakened by the administration and incorporation of foreign chemicals into the human body. The recent film version of Spiderman<sup>27</sup> requires its viewers to suspend disbelief sufficiently to imagine that a teenager might morph into a human/arachnid hybrid merely through the incorporation of the venom of a genetically altered spider into his body. His main rival is also chemically altered (with one dose of gas and irradiation) into a psychotic super villain. The film, like the comic books on which it is based, is intended to be fanciful, but the mistrust of unnatural hybrids has plagued human

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<sup>27</sup>SPIDERMAN (Sony Pictures 2002).

culture for millennia. Some of the most powerful and horrific monsters of mythology exhibited a type of abominable hybridization. Among the more dreadful is the Medusa, a reptile/woman hybrid whose head was wreathed with venomous snakes, and who was purported to be so hideous as to turn any unfortunate onlooker to stone.

More recently, in popular films such as Invasion of the Bodysnatchers,<sup>28</sup> and The Fly,<sup>29</sup> viewers are revolted by images of monstrous hybrids. In the former, alien pods engulf and replicate living humans, in one case, accidentally incorporating a household pet. The result is a disturbing image of a dog with a man's face. In The Fly, during a scientific experiment in teleportation, the DNA of a fly and a human being are accidentally commingled. As the genetic coding of the fly overwhelms the human subject, he hideously (and graphically) decays into a terrifically unpleasant giant insect. Such ideas are not to be taken seriously, but they do resonate with latent social fears. As human beings, we understandably wish to retain our place beyond the top of the food chain, and at some distance from the animal kingdom. Impossible or not, the thought that it may be possible to throw ourselves into the genetic cauldron sparks a little marginal anxiety. Associational disgust controls our unscientific fear in the case of aesthetic contamination, so why not also in the case of the newest types of genetic food alteration?

In addition to fears that insufficient time has passed to assess the long term effects on consumer health and environmental contamination, underlying anxieties dealt with earlier in this discussion resurface in the Frankenfoods context as well. Ideological fears of oral incorporation and associational contamination are as relevant to the products of gene manipulation as they are to medically harmless but aesthetically disfavored trace adulterants such as insect parts. Cultural taboos against toleration of genetic abominations are easily

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<sup>28</sup>INVASION OF THE BODYSNATCHERS (MGM 1978).

<sup>29</sup>THE FLY (Twentieth Century Fox 1958, 1986).



unearthed, and when paired with fears of moral contamination through ingestion, these social imperatives can have a powerful impact on consumer perceptions and attitudes. Scientific proof so far bolsters assurances that the current technologies produce medically safe food products. Cultural taboos have not been, and cannot be entirely ignored, in this case.

Consumer concerns over genetic engineering have given rise to suggestions that the FDA should use labeling regulations to force producers to differentiate genetically altered foodstuffs from “naturally” sourced food. The most obvious criticism of this suggestion is that all food has by this point in human history been somewhat genetically modified either by natural cross-breeding herself or by the selective breeding of cultivators. A further difficulty arises where small amounts of genetically manipulated products are present along with traditionally developed food crops.

Between twenty-five and forty-five percent of the major crops grown in the

United States are modified genetically, and it is likely that a significant portion of produce is intended for human consumption.<sup>30</sup>

The potential for introduction of the newest generation of genetically modified crops into the food supply on a large scale has given rise to demands that consumers be alerted. Under the current system, there are no special labeling requirements for foods of this kind, and no scientific evidence suggesting deleterious effects to consumer health in the long term. The default has been to give these crops the regulatory benefit of the doubt, and the interests of administrability and practicality are well served in this fashion. However, there is some validity to the suggestion that the default should be reversed until conclusive testing, not merely for new allergens, but for any long term effects of consumption has occurred, and medical safety concerns can

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<sup>30</sup>Andrew Pollack, *Biotechnology Treaty Stalls as U.S. and Developing Nations Quarrel*, N.Y. TIMES, Feb. 23, 1999, at A9, referred to in Lara Beth Winn, *Special Labeling Requirements for Genetically Engineered Food: How Sound Are the Analytical Frameworks Used by FDA and Food Producers?* 54 Food Drug L.J. 667 (1999).

be ruled out with greater certainty.

The potential chilling effect on advances in food production technologies that such a switch would entail has discouraged such action. In a direct face off between efficiency objectives (cheaper, more efficient food production) and the seemingly remote possibility of safety concerns as indicated by current scientific data, the FDA has come down on the side of the former. Of the three basic groups involved, producers, consumers and the FDA, the latter is in the best position to balance the interests involved and produce a relatively unbiased system serving the interests of the consumer, and facilitating the efficient implementation of food technologies. Scientific data and economic realities are clearly factors the FDA has considered, but increasingly, consumer attitudes are becoming a significant factor in the debate.

Commentators have identified public anxieties as a major problem for the regulator in the GMO food debate. One suggestion is that “[p]erhaps the most substantial short-term challenge for both Americans and European regulators will be the determination of the proper role of public opinion in the determination of food misbranding. While the FDA’s 1992 policy statement on the regulation of foods derived from genetically modified plants suggested that only safety concerns would lead to mandatory labeling, the agency’s 1993 request for comments opened the door to a labeling regime based not only on safety, but on what consumers believe to be subjectively important.”<sup>31</sup>

The FDA has clearly stated its preference for purely scientific foundation on which to base food labeling protocols. This lends credibility to the FDA as a regulatory body, and has been reinforced by the courts. Few instances exist in which “consumer interest alone was sufficient to justify requiring a product’s manufacturers to publish the functional equivalent of a warning about a production method that has no discernible impact on a final product.”<sup>32</sup>

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<sup>31</sup>Jeffrey K. Francer, *Frankenstein Foods Or Flavor Savers?: Regulating Agricultural Biotechnology In The United States And European Union*, 7 Va. J. Soc. Pol’y & L. 257 (2000).

<sup>32</sup>*Int’l Dairy Foods Ass’n v. Amestroy*, 92 F.3d 67, 73 (2nd Cir. 1996).

(iii). Common Consumer Concerns

Consumers may seek additional information for a several reasons. Simple fears associated with new technologies are one. This primary fear may be exacerbated by the fact that the FDA cannot absolutely guarantee the safety of genetically engineered foods, because of practicality concerns and the lack of long term research findings in the field. Other anxieties may center on the methods by which such testing has been carried out: uncertainty may not be eradicated without well funded, long term trials involving significant proportions of the population. In a field too complex to be thoroughly understood by the majority of the population, fears about possible mutation and uncertainty about the effects of such are not inconceivable, nor should they be expected to be rational in all cases.

Nutritional concerns may also contribute, including suspicions that unexpected mutations may make food more toxic, or that enhancing beneficial traits such as longevity in produce may artificially prolong the shelf-life of foods whose nutritional value has decreased. Further, consumers may object to genetic manipulation on moral or ethical grounds. The ability of the FDA to address these concerns is further complicated by the lack of a new regulatory and statutory framework designed specifically to assess the problem. Concerns thus far have been addressed using the existing regulatory framework, to assess both food safety and to regulate labeling.

(iv). Standards

Food safety is regulated under Section 402(a)(1) of the FDCA.<sup>33</sup> Foods derived from plants genetically modified by new techniques are considered equivalent to unaltered foods for the purpose of regulation under

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<sup>33</sup>21 U.S.C. Section 342(a)(1).

this statute. Food components or additives are similarly regulated under section 409.<sup>34</sup> The FDA thus classifies new genetically modified foodstuffs similarly to those not so altered regardless of the process by which these foodstuffs are produced.

In its 1992 policy statement on the issue, the FDA stated that foods produced using genetic manipulation (via recombinant DNA techniques) would require premarket notification, but not premarket approval.<sup>35</sup> Further, the FDA confirmed that there would be no special labeling requirement for such foods unless concerns over allergenicity or significant change in composition were raised. The FDA has subsequently relaxed this standard further, to an encouragement of premarket notification, and has relaxed its requirement of substantial similarity to one of substantial equivalence.<sup>36</sup>

In balance with the complexity and administrative difficulty of regulating foodstuffs with several different components, this approach by the FDA appears to balance appropriately valid interests both in safety and in efficient food production. A reevaluation of the FDA's labeling requirements likely presents the more suitable medium through which to address public opinion concerns. In other cases, the FDA has (prudently) not required that detailed information regarding the processes by which food are manufactured be included on labels.<sup>37</sup> In the context of the Frankenfoods controversy, a case can be made for altering this approach.

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<sup>34</sup>Id. at Section 348.

<sup>35</sup>57 *Fed. Reg.* 22,984 (May 29, 1992); Statement of Policy; Foods Derived From New Plant Varieties, Q&A Sheet (June 1992)

<sup>36</sup>62 *Fed. Reg.* 18, 938, 18, 945 n.2 (Apr. 17, 1997); Biotechnology of Food, FDA Backgrounder (May 18, 1994), at 1.

<sup>37</sup>As in the case of aesthetic contamination by trace amounts of rat hair and insect fragments.

## **B. Labeling: A Rose By Any Other Name Would Smell As Sweet.**

Under sections 321(n) and 343(a) of the FDCA, the FDA requires that all manufacturers address omissions and clarify misleading representations.<sup>38</sup> However, information about food development and processing are not required, nor are they considered material for the purposes of allowing consumers make educated decisions about their food choices. As such, genetically modified food which is substantially similar to its more traditional equivalent is not misbranded in the absence of special labeling: it is still properly referred to by the name of its less evolved equivalents.

The FDA has shown some willingness to require that certain details be emphasized or certain terms clarified in borderline cases. Examples include a sharpening of the definition of the word “fresh” to limit its inappropriate use in labeling, and circumscribing casual use of geographical locations on food labels where their use is not appropriate.<sup>39</sup> However, the question remains whether consumers want to know every detail about the development and production of the food on that arrives on their plates three times a day. The FDA has shrewdly overruled the suggestion that consumers need to be reminded about trace amounts of insect parts or rat hair that are both medically harmless and technically or economically impossible to eliminate from production. Given social anxieties that extend as far as pure associational contamination, rendering safe food disgusting to many, and to some, inedible on ideological grounds, some consumer protectionism on the part of the FDA seems reasonable.

There is a basic assumption that more information begets better, more educated decision-making. However,

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<sup>38</sup>54 Food Drug L.J. 667 provides a discussion of the labeling framework.

<sup>39</sup>Discussed *Id.*, using sections 321(n).

this is not always the case. One sided or incomplete information may be worse than no information at all. The adage that a little knowledge is a dangerous thing is trite, but applicable in this instance. If asked directly whether they would prefer more information over less, most consumers would probably say more. However, where the consumer is inundated with contradictory messages from various sources, confusion, mistrust and anxiety may be the dominant outcomes. Additionally, there is a danger that too much information may overwhelm the consumer, causing her to ignore or discount laundry lists of inscrutable information. There is a cost implicit in each additional labeling requirement, and a diminishing marginal return: as informational requirements expand, consumer choice may be distorted as the information may become harder to prioritize. Serious risk factors may be trivialized, or conflated in the consumer's mind with less medically imperative or more aesthetic concerns. More information for the consumer is costly, then, and should perhaps be issued sparingly in the interests of preserving consumer confidence.

In the case of genetically modified foodstuffs, the public is still being educated, and the information being disseminated via the modern media is not always accurate, unbiased or complete. As this discussion has tried to emphasize, anxieties over the purity, power and effects of the food we eat are ingrained in our society. So too are fears about genetic alteration, and the perceived tinkering of mad scientists. Information being provided to overlay these fears is in many instances simply more alarming than educational, and in some cases, directly exploitative of irrational anxieties.

Purported cases of the food supply being contaminated by dangerously genetically modified agents have been tried in the press repeatedly. As is inherent in the nature of the sound byte, information is typically incomplete, and later developments don't always make the headlines with the same urgency. One example is the media coverage surrounding the alleged contamination of the shelved corn products with StarLink. This largely concerned the EPA, which had approved StarLink for animal consumption only. The product had not been approved for human consumption because it contained the Cry9C

protein, a known allergen similar to one found in peanuts. While potential allergenic concerns kept it out of the human food supply, no evidence was ever presented that it actually caused allergic reactions in humans. Nonetheless, products were recalled from grocery stores, Kellogg's and Con Agra, among others, were forced to shut down production and test for trace contamination, and the creators of StarLink later agreed to pay millions in settlements to farmers and grain elevator operators. The implication from the callbacks and brouhaha, as enhanced by media sensationalism, was that introduction of unapproved genetically modified crops into the food supply approaches the catastrophic, despite the objectively low level of medical risk.<sup>40</sup>

Another example of alarmism exists in the case of the controversial findings of Arpad Pusztai in Scotland, who "fed GM potatoes containing an insecticide gene (from snowdrops) to rats and claimed it poisoned them. Despite Pusztai's claims that the public was being treated as human guinea pigs, the potatoes were never meant for human consumption. Additionally, the Royal Society criticized the rat studies as 'flawed in design, execution and analysis,' and lack[ing] detailed controls."<sup>41</sup>

Consumer groups appear also to have had a significant impact on consumer perceptions in this area. A number of groups seeking mandatory labeling of all genetically engineered foods were able to secure 300,000 petitionary signatures from consumers concerned that there may be unrevealed health risks, or religious and moral impediments associated with consumption of genetically modified foodstuffs and ingredients.<sup>42</sup>

In a certain light, the FDA's stance on labeling requirements offers a certain degree of guidance to the consumer. Requiring special labeling for GMOs and their derivatives might overstate their potential hazards to a populace already being bombarded with contradictory messages. The FDA's considerable credibility in the eyes of consumers is certainly a contributory factor, and is perhaps what places American consumers in

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<sup>40</sup>Charles A. Deacon and Emilie K. Patterson, *Emerging Trends in Biotechnology Litigation*, 20 Rev. Litig. 589 discusses the StarLink controversy in some detail, citing James Cox, *StarLink Fiasco Wreaks Havoc in Heartland: Developer Wants EPA to Approve Seed for Food Supply*, USA Today, Oct. 27, 2000.

<sup>41</sup>John Stephen Fredland, *Unlabel Their Frankenstein Foods: Evaluating a U.S. Challenge to the European Commission's Labeling Requirements for Food Products Containing Genetically-Modified Organisms*, 33 Vand. J. Transnat'l L. 183, 188 (2000).

<sup>42</sup>20 Rev. Litig. 589 suggests that there is a trend toward increased litigiousness on the part of these groups.

a more reassuring regulatory system than those in other parts of the world. Perhaps even to one which is edging a little closer to the Wonderland of Alice's adventures. Analysts have identified a significant disparity in attitudes toward genetically modified foods in different industrialized societies. It has been suggested that "two-thirds to three-quarters of consumers in the United States support biotechnology and are willing to accept foods enhanced by biotechnology. In contrast, a 1997 poll of 5,000 Europeans conducted by Greenpeace and Market & Opinion Research International indicated that 59 percent of Danes, Dutch, French, British, Italians, and Swedes do not support the development of genetically modified foods...[t]here are similar disparities of opinion among European and American perceptions of genetic engineering as a serious risk."<sup>43</sup>

Proffered explanations for this discrepancy include the openness of the US regulatory system (as opposed to more closed-door systems such as that operating in the United Kingdom). Another common explanation is the highly publicized health scares surrounding bovine spongiform encephalopathy (BSE) or mad cow disease that have gripped Europe, and crushed consumer confidence in the ability of government regulators to protect the integrity of the food supply. If these theories are correct, they give rise to the slightly worrying prospect that a highly publicized health scare could render a double blow to the American consumer. Apart from the potential detriment that the risk of contamination of the food source would cause to consumer health and confidence and to manufacturers' credibility and economic wellbeing, a blow to the credibility of the FDA could also damage consumer confidence in the long term. The trend toward protectionism benefits the consumer, relieving some responsibility for information gathering in an environment buzzing with contradictory viewpoints, displaying varying degrees of credibility. It also confers an intangible benefit of reassuring consumers and quelling certain significant socialized anxieties that might otherwise control or be exploited by the news media. However, it also raises the stakes in the advent of mistake or misfortune,

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<sup>43</sup>Francer, *supra* n31 at 295.



particularly in light of the fact that labeling requirements do not amount to warning statements.<sup>44</sup>

In light of significant latent social anxieties underlying consumer perceptions of food development, origin, production and regulation, it appears that these heightened stakes are an acceptable price to pay. When weighed against the costs of expanding labeling requirements, imposing a chilling effect on research, development and production of beneficial food crops, and exposing the consumer to potential information overload, some guidance, along the lines of the Wonderland model, appears to be the better solution. While there is unmistakably a place for valid and purely socialized consumer anxiety in the food regulation debate, the FDA is justified in regulating to counterbalance what it considers misinformation and to display a slightly protectionist attitude toward the consumer.

Consumer education about biotechnology is ongoing. Despite rooted social anxieties, some rational, others more instinctual, the potential exists for public sentiment to embrace the many benefits of bioengineered food. Enhanced nutritional value and aesthetic appeal, food longevity and cost efficiency are among these potential benefits, not to mention the potential for better solutions to global nutritional problems. As this potent food technology facilitates our journey into a world with greater potential to feed more of its inhabitants more cost effectively, perhaps it is appropriate for these foodstuffs be simply but attractively labeled: “EAT ME,” just as they might in Alice’s world.

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<sup>44</sup>51 Fed. Reg. at 13, 338.